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This report presents a model for effective organization of the curriculum. Typical curriculum patterns are examined and deficiences suggested: the hierarchical organization of the disciplines bears little relationship to student needs: departmental structures serve to divide faculty members and inhibit cooperation. It is suggested that a comprehensive developmental program most appropriate to the community college should not follow a definite sequence but should be flexible and draw on content from a number if disciplines. This model calls for program and course coordinators and defines the functions of each. Advantages of the Curriculum Organization Grid include a systematic device for planning, for improving instruction, for developing accurate program costs, and for identifying needed supporting staff and services. Colleges that have tried this model in part are also listed. (JC)

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A Curriculum Organization Grid System:

A Model for Community College Curriculum Development

By

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March 28, 1969

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In the preface to his book, Realms of Meaning, Dr. Phillip Phenix (5) indicated that there are two major temptations in the revived interest in various curriculum patterns of knowledge. The first temptation is to return to a traditional subject-matter curriculum related neither to the needs or abilities of the individual learner, nor to the social and psychological factors affecting education. The second temptation is to construe knowledge too narrowly in purely intellectual terms when analysis shows that the full development of human beings requires education in a variety of realms of meaning rather than in a single type of rationality. Further on in his discussion of the organization of knowledge, Phenix outlines this new concept as follows:

Realms of Meaning	Disciplines
Symbolics	Ordinary language, mathematics, non-discursive symbolic forms.
Empirics	Physical sciences, life sciences, psychology, social sciences.
Esthetics	Music, visual arts, arts of movement, literature.
Synnoetics	Philosophy, psychology, literature, religion, in their existential aspects.
Ethics	The varied special areas of moral and ethical concern.
Synoptics	History, religion, philosophy.

It can readily be seen that such a suggested structure is far more "process" oriented than any current organization of various subjects, with such an orientation tending to be an interdiscipline approach since the main theme is along the lines of various processes such as empirics or esthetics. It can be suggested, for example, that

the present curriculum trend of merging the appropriate elements of literature, art, music, and the performing arts into a single APPRECIATION or HUMANITIES course is within the esthetics context of Dr. Phenix.

From a somewhat different perspective, Schwab, (6) in a thoughtful discourse on the structure of the disciplines, summarized the organizational problems of the various disciplines as:

1) Their subject matter
2) Their practitioners
3) Their methods (syntax)
4) Their ends (kinds of knowledge or outcomes).

Even though these categories are expressed in their simplest form, Schwab apparently neglected to mention the impact of the students themselves. Blocker, Plummer, and Richardson (1) observed that in the two-year colleges the three determinants of the curriculum are broadly classified as extrainstitutional, intrainstitutional, and administrative influences. Schwab's practitioner and methods problems fit within intrainstitutional influences while the subject matter and the ends or outcome problems are within the area of extrainstitution influences such as occupational requirements, state and national policies, or the requirements of the four-year colleges. Of course, such community college administrative influences as financial support, board policies, and the role of the college also add to the organizational problems of the curriculum.

The rather academic issue of the Comtian hierarchy should be pointed out at this time because of its important relationship to the past patterns of curriculum organization. While the process orientation curriculum pattern of Phenix is a refreshing approach that

certainly has long range implications for any level of curriculum planning, the older view of Auguste Comte's discipline classification is based on the positive hierarchy of the sciences in which subject matter, and only subject matter, provided the basis for such a classification. The Comtian hierarchy of the sciences goes from mathematics to physics, chemistry, biology, and then to the social sciences. Schwab claims that because of its simplicity, this hierarchy of disciplines has been one of the most tyrannical and unexamined curriculum principles in our time, and has dictated at least thirty-five per cent of all the sequences of the sciences. The physicist demands that mathematics precede physics, the chemist demands that physic precedes chemistry, and so on, with each one appealing to the Comtian hierarchy for the reason of such a structure.

It is quite possible to read the Comtian hierarchy the other way around. Actually, the basis of the hierarchy requires that each science in the hierarchy be well developed before the one above it can be developed. This principle could be applied to chemistry where knowledge can be developed only if all the behaviors of chemicals are sought out and identified. At this point, arises the startling corollary that leads to an inverted arrangement of the Comtian hierarchy. If biologicals are organizations of chemicals, then it follows that a study of social science should then precede the complete knowledge of biologicals, chemicals, etc. Thus, it is just as plausible to read the Comtian hierarchy from sociology downward to mathematics as it is to read it upward.

Mathematics cannot be argued for as a prerequisite to physics, etc. on the assumption that the Comtian hierarchy is an unequivocal

curriculum principle. Schwab contends that we might well argue that appropriate portions of these alleged prerequisites should be taught as the need arises during the study of the higher sciences. A curriculum choice between the upward or downward version of the hierarchy cannot be made on subject-matter criteria alone, but rather we must look to the capacities of our students, the ways that learning occurs, and to our objectives in order to make such a decision. (6:18-21)

Now, if one looks at the current situation in most comprehensive community colleges, it will be found that there is a considerable dichotomy based along the transfer versus career or vocational-technical curriculums and programs, to say nothing of the gulf between the faculties representative of such subject areas. While several community colleges, such as William Rainey Harper College, are developing an integrated approach where the career programs are incorporated within the divisional structure, and serviced by a decentralized counseling approach, the lack of faculty understanding of the roles of the various programs still remains. Dorothy Knoll (4) expressed concern over this type of problem last year at the A.A.H.E. convention, where she stated that:

> The staffing needs of new and developing community colleges must be projected, as well as those of established but expanding colleges and of state agencies which work with the local colleges. Staff needs are so enormous in this rapidly expanding segment of higher education that new personnel must be drawn from many sources. The diversity of their backgrounds is impressive--from graduate schools (without experience) and from four-year college faculties, from secondary schools and from government and industry. Probably a small minority now comes up through the community colleges, into pre-service programs to prepare faculty for junior colleges. The task of shaping this heterogeneous (though talented) group into a community college faculty with both philosophic commitment and professional skills equal to the challenge is of such magnitude as to require the resources of both the seasoned junior colleges and the cooperating senior institutions.

The occupational or career program curriculums are usually well organized and much publicized by the appropriate college brochures. A typical two-year career program might have most of the following elements:

	Career Program (A.A.S. degree)
1st Semester	2 "major" courses English Comp. Social Sc. Elective P.E. elective
2nd Semester	3 "major" courses English Comp. Social Sc. elective P.E. elective
3rd Semester	2-3 "major" courses Humanities elective P.E. elective
4th Semester	2-3 "major" courses 2 elective courses P.E. elective

Thus, it is fairly clear when a student enrolls in such a program what his path of progress is going to be, even if such a program is only a one-year certificate program. From a staff organizational standpoint, there is usually no thought given to ascribing a departmental status for such a program within the college.

When one takes a look at the transfer program area of the community colleges, a different picture presents itself. Those colleges with departments below the division organization level have quite a time trying to absorb, or work with those "other guys over there that teach those vocational courses". This problem has occurred because the departments have structured themselves along the lines of the traditional four-year colleges, a la the Comtian hierarchy. With such

a subject or discipline organization and accompanying staffing patterns, it is a small wonder that faculty in departments so structured have difficulty in finding room for career, developmental, or general education staff members as found in most comprehensive community colleges. A typical transfer program probably would have most of the following elements:

	Transfer Program (A.A. Degree)
1st Semester	2 "major" courses English Comp. Language P.E. elective
2nd Semester	2 "major" courses English Comp. Language P.E. elective
3rd Semester	3 "major" courses Social Sc. Humanities P.E. elective
4th Semester	3 "major" courses Humanities P.E. elective

Upon comparing this with the career programs, their similarity is striking. Generally, six hours each of English, Social Science, Humanities, and eight hours of Science and Math are required for a degree fulfillment. At any given college, there may be 10-20 career programs well defined as to their course sequence. However, if the transfer areas were examined, probably a typical community college could find 35-40 transfer programs somewhat less clearly structured as preprofessional, and not likely to be found in the catalog. While more and more colleges are including transfer programs in their catalogs, it should

become standard practice to outline the curriculum of each transfer program which would be labeled or described as a pre-professional program.

A true comprehensive developmental program, which should serve both ends of the learning skills spectrum (speed reading, as well as "remedial" reading, for example) probably does not have a sequence but rather a varying content drawn from a number of disciplines. A typical developmental program while not "graduating" a student might have many of the following components:

Developmental Program	
English - (Comp.)	90
English - (Reading)	95
Math -	95
Bio - (Natural Sc.)	99
Others -	90,99

Speed Reading

———

Honor Program
or Courses
(based on creativity)

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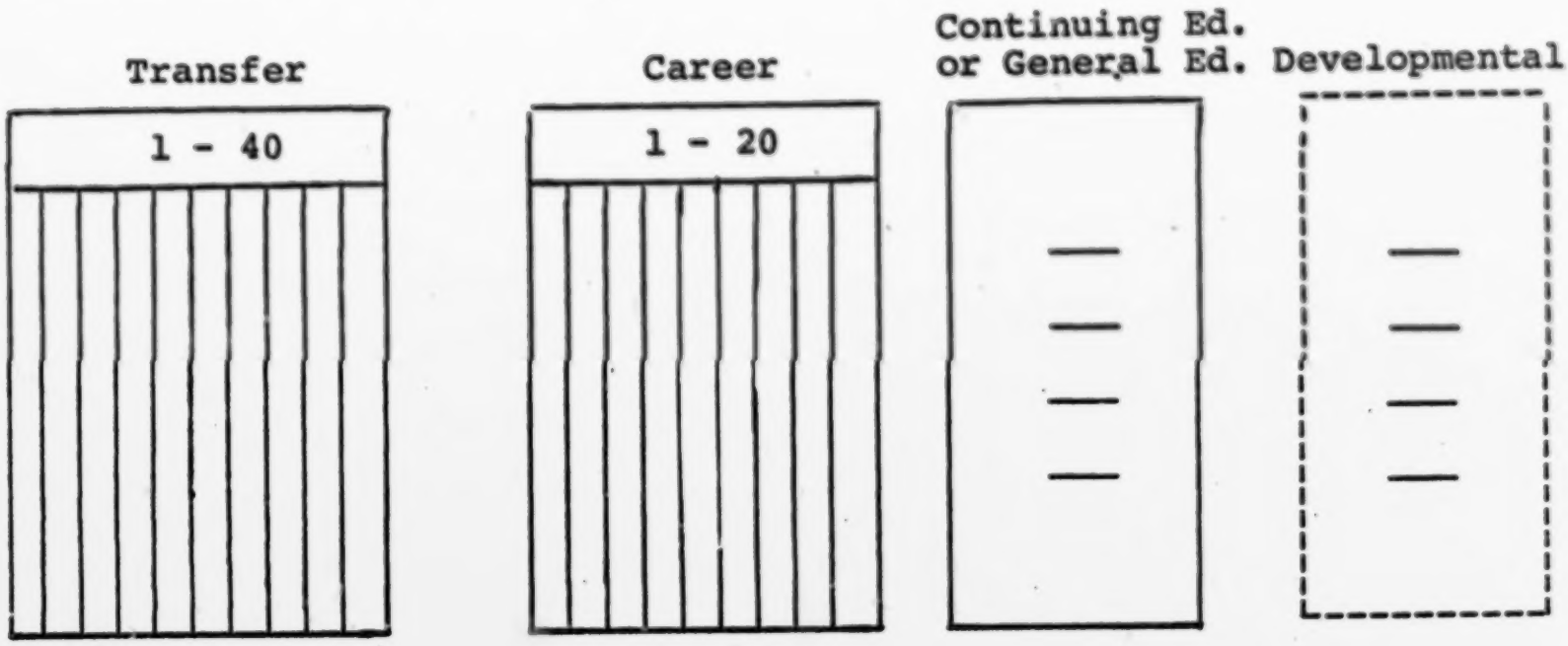
Another comprehensive community college commitment is in continuing education and general education. While catalog definitions of general education vary from college to college, they usually express a theme of developing an individual as a useful communicative citizen of

our society. In discussing the role of general education, Phenix (5:211) expressed his outlook on this topic when he wrote:

> "The curriculum of general education contains those provisions for learning that are necessary for the development of the person in his essential humanity. General education is contrasted with *specialized* education, which includes provision for the development of particular competences for other purposes than the becoming of a person as a person."

Thus, lining up these vertical program components of a community college, they look like this:



It must be pointed out here that when a student enters college, he usually has some kind of occupational or cultural program* in mind which is represented by the vertical columns above.

Now when a division staff organization structure is oriented horizontally across the programs, a grid is formed. For example, the mathematics staff, which is usually found in the Science Division, teaches courses that apply to the transfer, career, and developmental programs

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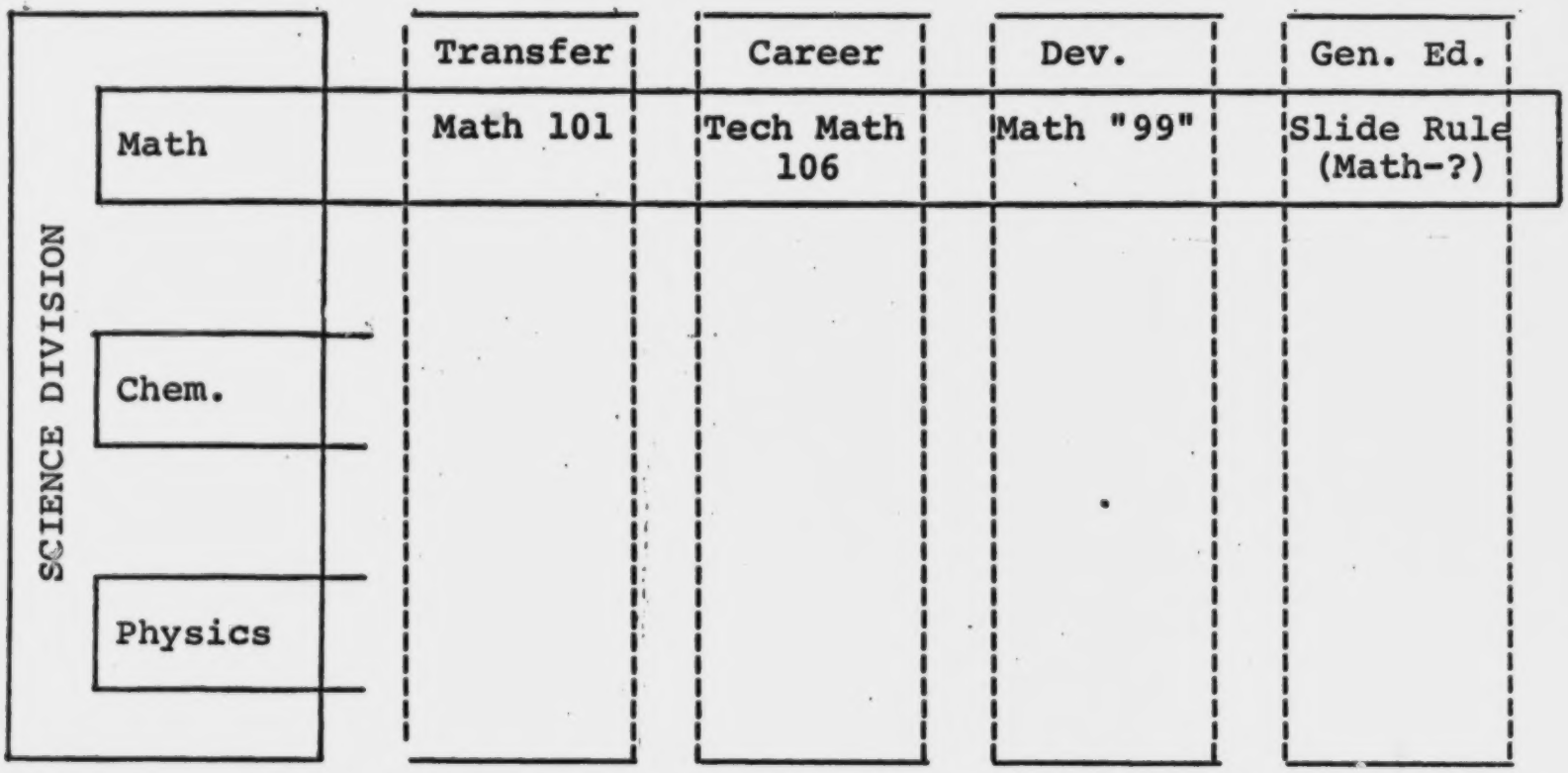
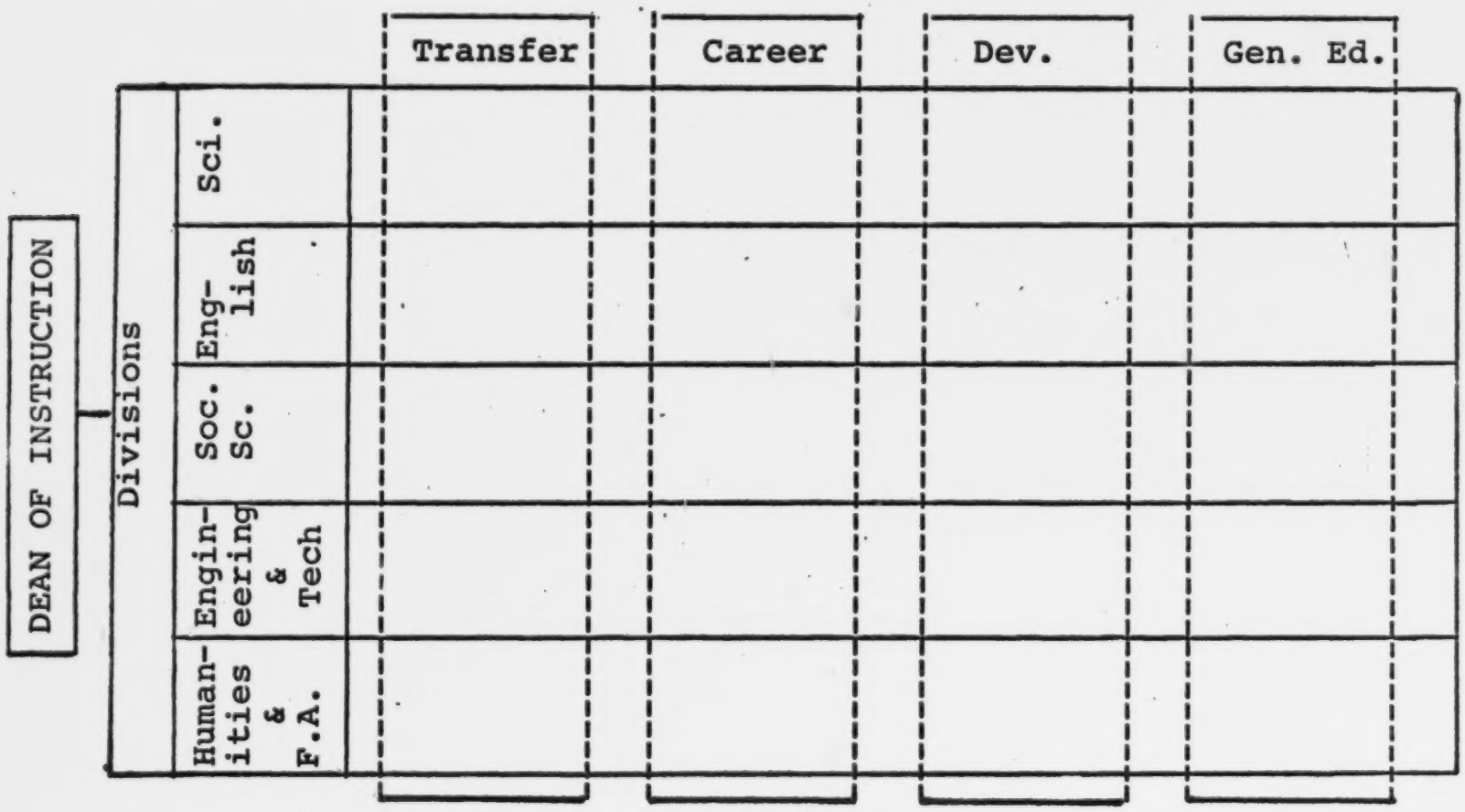
*Definition: PROGRAM - A vehicle of instruction composed of a curriculum or series of courses for a period of time which will provide an instructional framework within which a student may attempt to reach an occupational or cultural goal.

and probably offers a course in the evening for adult or general education.



Thus, the mathematic staff of a Science Division along with other discipline components in the Division really provide instructional support service to the curriculum of the programs. A more generalized Curriculum Organization Grid model of this might be as follows:



When organizing the staff at the community colleges, another dichotomy appears. The structure of the staff organization is usually based on departments beyond the division and this is roughly based on the Comtian hierarchy, while the career or technical programs staff organization is based on the particular program and its goals for the students. So on the one hand, the staff is predominently subject discipline oriented without too much regard to the major of the student, and on the other hand, the staff is oriented towards a goal which leads the student to program completion and an associate degree. In a very recent study of the undergraduate curriculum, Paul Dressel (2) perceived the nature of such problems when he stated that:

> "A well-planned curriculum, of which an essential part is a statement of objectives and a rationale for the experiences provided, is a necessary structure in which instruction can be appropriately defined in relation to the learnings desired. If a faculty cannot or has not been able to agree on a comprehensive curricular design, good instruction will surely be fortuitous. It will also be individualistic in that it will be based on personality factors, and it will be isolated in that each 'good' instructor becomes such by becoming a 'character' rather than by becoming a contributor to a grand design."

What at least seems to remain to be done is for the colleges to appoint transfer program coordinators*, as well as the coordinators already supervising the career programs and begin to move along towards Dressel's suggestion of contributing to a grand design.

Part I

Part II

The Curriculum Organization Grid (C.O.G.) model is not a panacea for a college staff organizational chart nor a total solution to cur-

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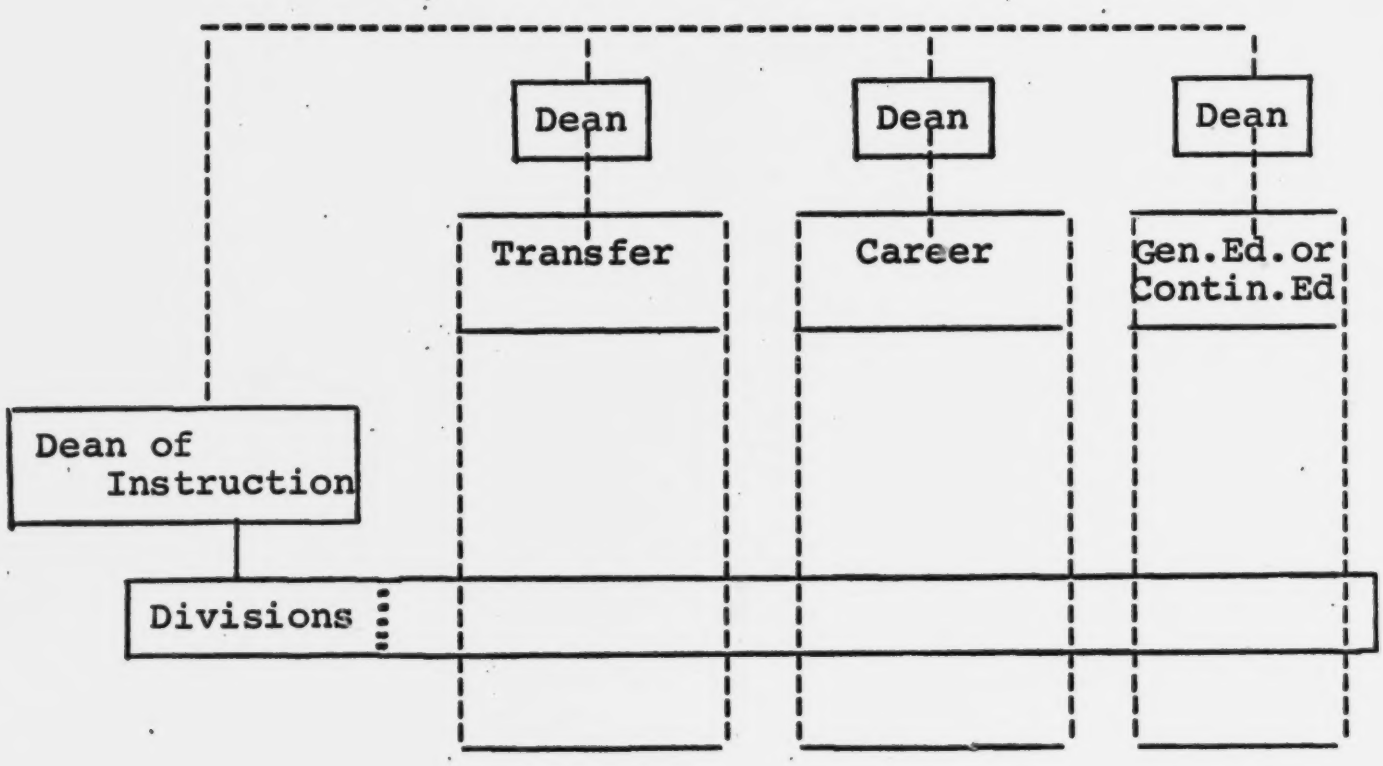
*Definition: PROGRAM COORDINATOR - A faculty member who is responsible for leading coordinating, and supervising personnel for the development of curriculum for certain program(s).

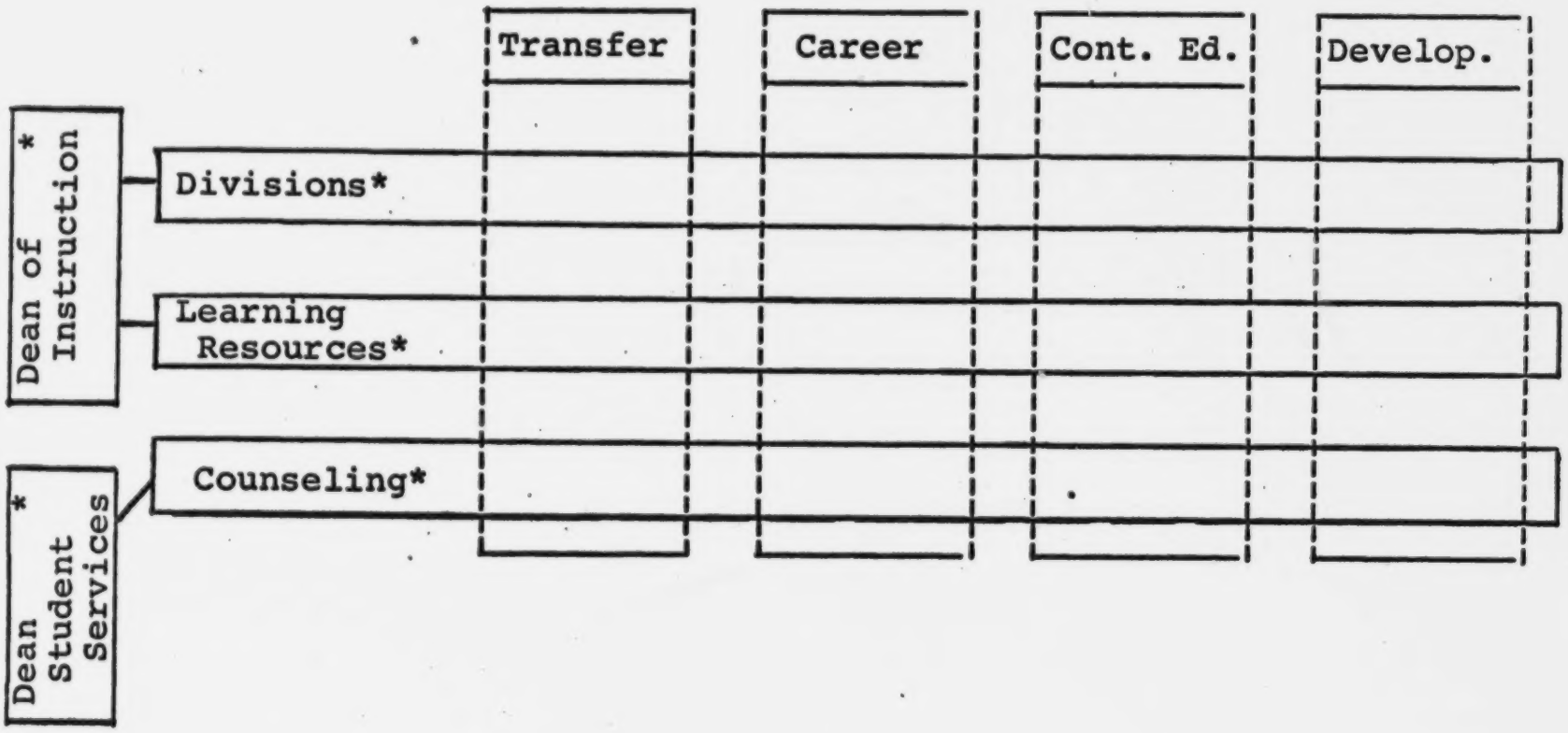
riculum problems but it does have a number of implications for the community colleges. First, if your college has dean level positions acting in a staff, not line capacity, this relationship certainly could be expressed as follows by the usual dotted line:



This illustrates the situation where the line authority flows from the Dean of Instruction to the Division Chairman and where all such responsibility for budget, scheduling, and personnel resides at the Divisional level. Again, the divisions are servicing the programs by providing the instructional support to the various courses comprising any given program. This divisional servicing of programs is happening anyway, although few educators actually realize it or address this operational reality by incorporating it in their planning.

Another organization guide that the C.O.G. model provides is to allow for the proper inclusion of any support services. Thus, the grid might look like this for student services (particularly counsel-

ing), and learning resources:



The role of a program coordinator whether transfer, career, or something else is to coordinate and supervise the instructional framework within which a student may attempt to reach an occupational (career) or cultural goal. The main responsibility is to ensure that the curriculum as established, and set forth in the catalog, is effectively meeting the needs of students desiring to succeed in the pursuit of their occupational or cultural objectives while at the same time maintaining the proper balances of the curriculum determinants of extra-and-intra-institutional, as well as the administrative influences previously noted by Blocker, Plumer, and Richardson. In practice, such a program coordinator would only carry a partial teaching load depending on the size of the staff and number of students in the

*Note: Many newly developing community colleges are evolving widely different organizational patterns at these levels but the service functions within, or for, the programs would still be the same.

program and probably within the transfer areas one individual might supervise several programs. Another role of the program coordinator is to cooperatively organize a staff from the subject disciplines within the divisions. This would be an interdisciplinary approach because appropriate teachers from almost every division would be in support of a given program. Thus, a biology teacher from the science division might participate in a staff meeting of the electronics program because most of the students in it sign up for biology as a science course, or the more obvious one, the biology teacher would participate in some of the medically related program staff meetings.

Something else the use of such a curriculum organization grid will reveal, is what might be called the "chaining effect" of basic or prerequisite courses. The chain reaction effect of these basic or or prerequisite courses has enormous implications for curriculum planning. When such a course services a wide variety of student interests (goals), then they cannot be taught solely as though each student in the class is going to be a pre-professional or major in that discipline. What needs to be answered for such courses is - *What exact body of knowledge, attitudes (appreciations) and skills does any student, regardless of his major, have to "know" in such a course?* Then in addition to this - *What exact amount of knowledge, appreciations, and skills does a student, because of his major, have to "know" in such a course?* At this point, the complex strategies and tactics of specifying instructional objectives*, and analyzing the learners, analyzing

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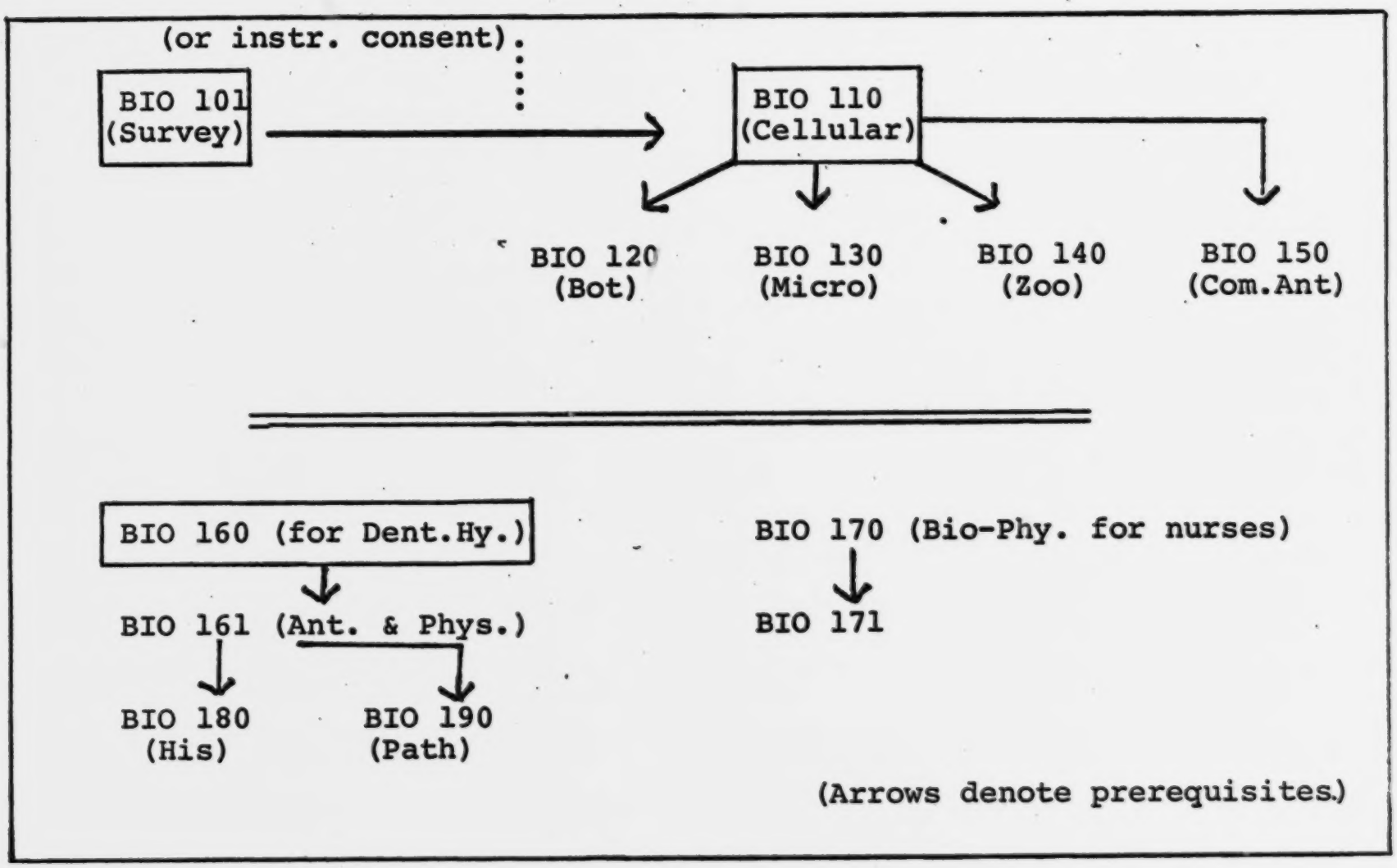
*Definition: INSTRUCTIONAL OBJECTIVES - Those statements originated by the instructors concerning anticipated student achievements within a course or portion thereof, which are expressed in such terminology as to make the evaluation of these achievements possible by these instructors and their students.

the learning tasks (concept analysis), sequencing these tasks, and developing and validating the supporting instructional materials must be undertaken--little of which is currently being done anywhere! As an example of this, all the biology courses listed in Harper College's 1968-69 catalog, charted as a chain reaction, looks like this:



First, it can readily be seen that the biology courses and staff are not only servicing the transfer programs but are servicing the career programs in nursing and dental hygiene. Secondly, the "chaining effect" is evident in three courses, namely Bio 101, Bio 110, and Bio 160, from each of which stems at least two other courses.

If such a chaining of courses within and across programs is "where the action is", then a key staff person in this concept would be an in-

dividual designated as a course coordinator* whose main task is to oversee such a specific basic course as the Bio 110. This individual might just have some release time or be a full time coordinator depending on the number of class sections, and staff servicing such a course. Again, the impact of emphasizing the staff and support relationships at this basic course level is that if a student misses or fails to "understand" some of the basic concepts within such a course, then the potential of failure, dropping out, poorer grades, or greater misunderstanding at the next course level has been increased drastically.

Another function of the course coordinator would be to insure that the appropriate instructional objectives, course sequencing, etc. is being done for that course, regardless of whether it is done by himself or another staff member more proficient in such skills. The course coordinator, while remaining in line relationship in a division would also now have a staff function in the various programs served, and should be invited to attend any program staff meetings held which deal with the curriculum aspects of that program. This would be an effective technique to provide the staff environment in which different discipline representatives share in the problems of the various programs.

One other contribution the course coordinator could assist in making is to relate the learning resource needs to that particular course in a way not possible before. The materials, the development, produc-

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*Definition: COURSE COORDINATOR - A faculty member who is responsible for leading, coordinating, and supervising personnel for the development of curriculum for a <u>specific</u> <u>subject</u> area or course.

tion, or purchase costs, as well as their utilization could proportionally accountable in direct support of each program. For the first time then, it could be fairly accurately stated what the cost of a particular program might be in terms of salaries (or portions thereof) facilities, and materials for each supporting course. The career or vocational-technical programs are approximating this concept now, but the transfer programs have largely escaped this kind of accountably, because of the departmental orientation in the past, based primarily on a discipline concept.

The differences in the roles of the program coordinator and the course coordinators are important. The program coordinator "manages" the curriculum and staff that comprise a particular program. He also articulates between the student services (mainly, counselors and registrars), administration, division chairmen, and deans (transfer or voc-tech.) who then articulate with the state agencies, colleges, and other institutions. Once a curriculum has been set up and implemented, the function of a program coordinator is one of maintenance. The course coordinator deals primarily with "managing" a particular course especially the basic ones that precipitate the chaining effect within the curriculum. It is rather obvious that in a specialty area a one section course will have the instructor as its course coordinator with the usual preparation, etc. as part of his teaching routine. The basic courses or those with multisections are the ones that a course coordinator is most effective for the impact on students. His tasks are first line instructional responsibilities to ensure that the effective learning materials, techniques, and sequences are developed and organized for that particular course, and regardless of the

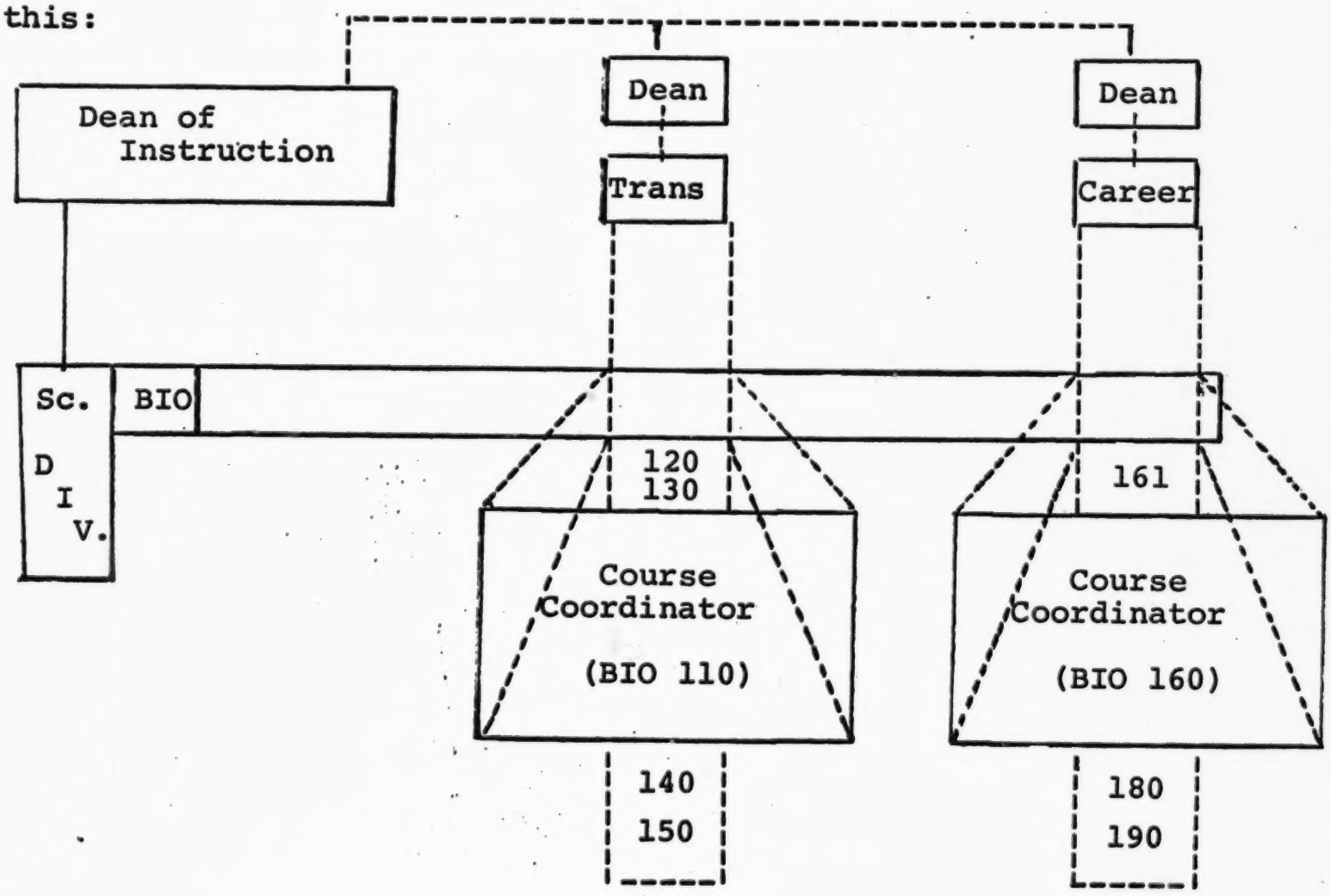
course section assigned, the students should be guaranteed <u>similar instruction</u> and equal evaluation of their achievements within this course. The chart below outlines major distinctions between the program and course coordinators:

Program Coordinator Functions	Course Coordinator Functions
1. Holds program staff meetings.	1. Organizes or supervises the development of course outlines, units, learning sequences, etc. Prime evaluator of student achievement.
2. Coordinate matters relating to curriculum revisions.	2. Coordinates the instruction in other sections of the same course. (Students should get similar instruction.)
3. Acts as liason between course coordinators and upper administrative levels for articulation problems. Also assists extrainstitutional articulation.	3. Requests instructional support materials.
4. If within a division line structure, assist the division chairman in selecting and hiring staff to service the program.	4. Attends program staff meetings when appropriate.
5. Performs other such functions as necessary to maintain the program's effectiveness.	5. Suggests course content changes to program coordinator as it would affect his program.
6. Relates changes to the Curriculum or Academic Affairs Committee.	6. Relates course changes to other courses in the chain.
	7. Relates course method changes to Instruction Improvement Committee for evaluation and dissemination.

Once again, the course coordinator is "where the action is" and when linked with appropriate support, personnel such as counselors and learning recourse staff, the enhancement of student achievement within these courses will be at a maximum. If the students achieve well in

the basic or prerequisite course, the chances that they will succeed in the following courses of the chain will be greatly increased. From an administrative or budget standpoint, a college should put more emphasis on support of the course coordinator than the program coordinator.

The rationale for this is that the program coordinator is actually maintaining the system and his major involvement is chairing meetins and articulating. The course coordinator, being at focal point of instruction, bears a greater responsibility for the success of the students. As noted in the chart of the functions, the role of the course coordinator is oriented to the improvement of instruction. In the example of the chaining effect in the biology courses, the course coordinator's location in the grid could be represented like this:

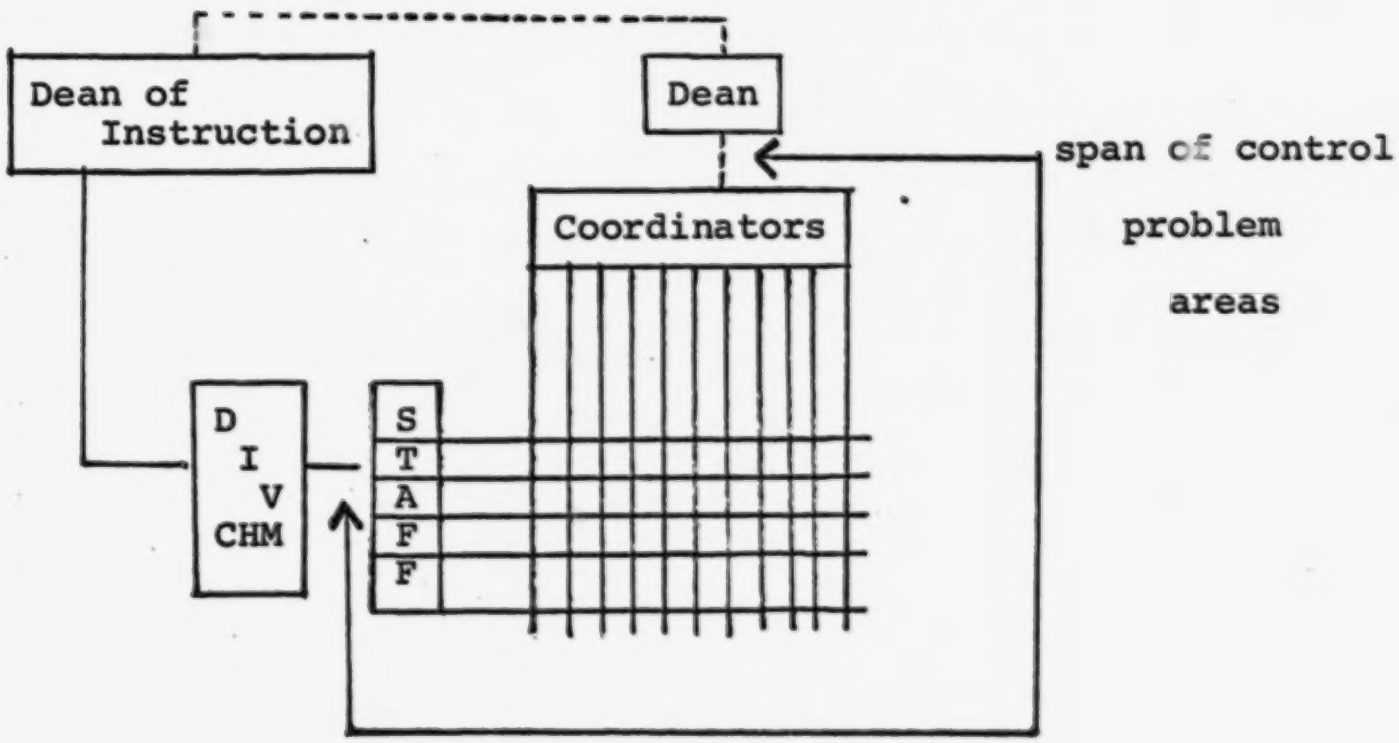


This is not meant to infer that there is a course coordinator for Transfer Biology Courses and another for Career Biology Courses, but simply that as noted before the Bio 110 (and actually the Bio 101), and the Bio 160 were courses that began a chaining sequence and thus are extremely critical. Another type of course which may not have a chaining effect but is also important to the students are other required courses and basic elective courses in content areas that are required for graduation, such as Art Appreciation in the Humanities area.

One of the concerns that might be raised about the C.O.G. model is the implication for budgeting in terms of staffing the various coordinator positions. While there should be concern, the problem is not as great as it first appears. First, based on the assumption that a program is already implemented (program survey and development efforts would remain about the same) there would be little reason to give further release time, etc. to a program coordinator whose main function is articulation. The course coordinator situation is somewhat different. Depending on the number of sections, importance to the chaining effect, or the basic required foundation courses, then the course coordinator should get release time for instructional development and in some cases even be full time at this position. The minimum that could be offered a course coordinator should be a lighter teaching load in the spring semester and perhaps a reduced committee load. Each college would have to examine its own structure, personnel, and resources to best develop its own patterns for compensating these key individuals.

Another concern that might be raised about this concept is the

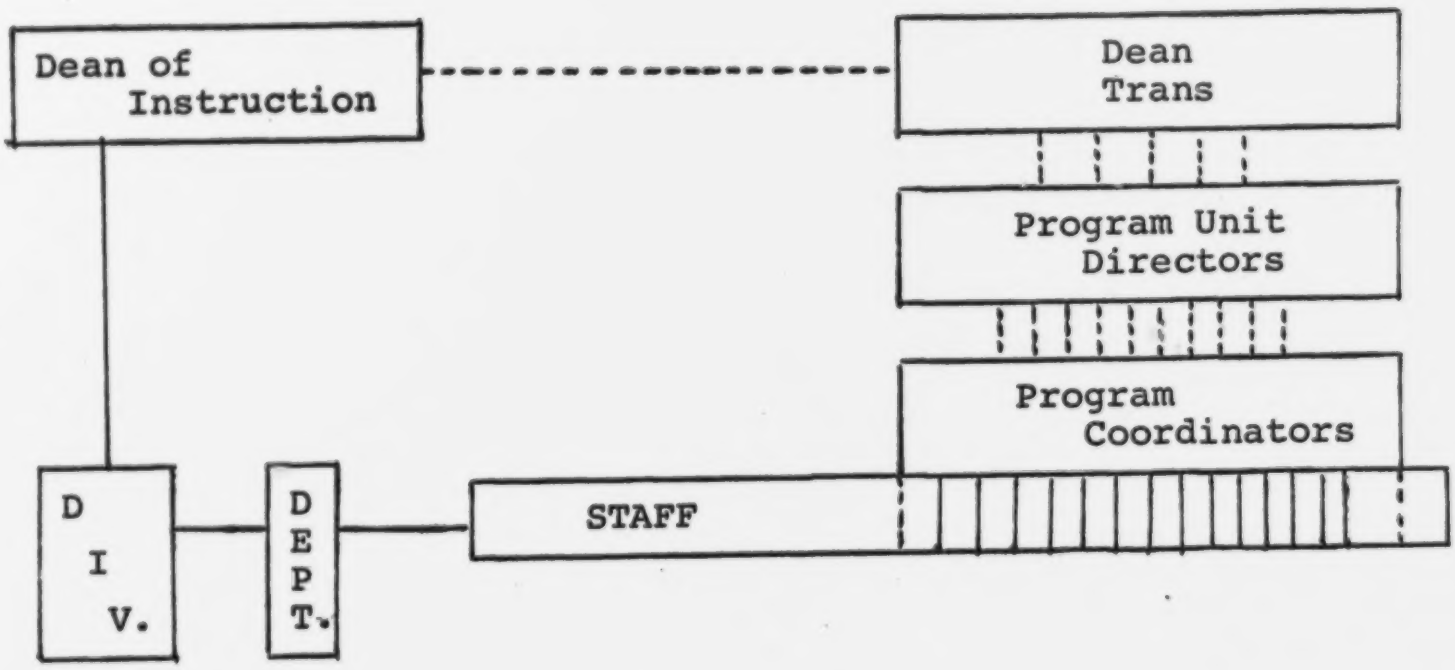
management principle of the "span of control". Generally, if too many personnel are reporting to one individual the network breaks down. The points of concern over this span of control with the C.O.G. model lie between the program deans and the appropriate coordinators in the vertical orientation, and also in horizontal orientation between the Division Chairman and the instructional staff as indicated below:



The solution on the division level (horizontal) is a modified department structure based on the traditional subject hierarchy approach. Probably only enough department "chairman" need be assigned to provide an effective span of control within the division. The duties of these individuals would be of a routine administrative nature without the curriculum aspects.

On the program level (vertical) a possible solution is to assign one of the program coordinators (one which shows leadership promise) as a "program unit director" to coordinate activities between the appropriate dean and the coordinators. This assignment would be a collateral duty merely to provide a communication channel for an effective

span of control. For example, in Harper College's catalog, on p. 54, listing the Transfer Programs, there are eight major headings entitled - Business, Education, Engineering, Humanities, Medicine, Natural Science and Mathematics, and Social Sciences, all of which have eight or more programs listed under them. These are not divisional listings but could form a reasonable cluster to assign a program unit director to assist the Transfer Dean with coordination, program curriculum, and articulation problems. In the Career or Vocational-Technical program, a similar clustering of related programs could have a program unit director assigned. With these collateral duty assignments, that portion of the grid model would then look like this:



This concept would be particularly significant for colleges with multicampus operations where the divisional level would function at each campus and program groupings function for the college as a whole. Again, the student comes to college for a program (cultural or occupational goal) regardless of the course section or campus where the in-

struction is given,and thus the programs are institutional wide while the divisions are campus oriented.

As it was stated previously, the Curriculum Organization Grid model is not a cure all for the staffing, organizational, instructional, or curriculum problems at the comprehensive community colleges. However, the following uses of such a grid system are suggested:

1. For staff meetings - planning and discussion.
2. Organization of instructional staff for effective teaching.
3. Placing the emphasis on curriculum and instructional development rather than "maintaining the system".
4. Permits each faculty member a "place in the sun" and relates his instructional activities and skills to the various programs offered by the college (differentiated teaching).
5. Allows for judicious use of supporting staff and services.
6. Provides for possible organization of staff with balanced functions and appropriate span of control. Also allows for adjustments along staff and line functions.
7. Provides for expansion along divisional lines into a multi-campus operation or expansion along program lines to provide greater educational services to the community.

At this point, the question probably arises as to where this might have been tried. Bits and pieces of some of this model have been tried or used by:

1. Broward Junior College (Fla.) - Implemented the program coordinator concept in 1967 but without appropriate emphasis on course coordinators and without a divisional grid matrix.
2. John Tyler College (Va.) - A prototype model* was used in their faculty workshop in September 1968 for discussion

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*The author, who participated in this workshop, gratefully acknowledges the contribution of Dr. Myron Blee, Executive Director, Associated Consultants in Education (A.C.E.) Tallahassee, Fla. for the ideas presented at this workshop on the course arrangements in the program areas of the prototype grid model.

3. William Rainey Harper College (Ill.) - At administrative, divisional, and some coordinator level meetings for discussion.

4. Florida Jr. College at Jacksonville (Fla.) -"A Report to the District Board of Trustees",February 6, 1969, suggested such a grid organization as Alternative Plan B as a staffing plan for their multicampus college. (3)

Perhaps others are trying some version of this at their own colleges since there is little that is new in the model. On the other hand, such rearrangements of old patterns does allow for new orientations and conditions to emerge within a college, and be of assistance to those new comprehensive community colleges searching for a more encompassing way to express the framework within which they might function. And for those new colleges (such as Pima, Essex, and Brookdale) which are beginning to organize themselves along a "house" concept, they might want to take a good look at the six realms of meaning (a la Phenix) as a possible divisional pattern in which to arrange the supporting staff and services to the programs that the students will be striving to complete.

BIBLIOGRAPHY

1. Blocker, C. E., Plummer, R. H. and Richardson, R. C., Jr., The Two-Year College: A Social Synthesis. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965. p.205.

2. Dressel, Paul L., and DeLisle, Frances H., Undergraduate Curriculum Trends, American Council on Education, Wash. D.C., 1969, 83 pp.

3. "The Florida Junior College at Jacksonville - A Report to the District Board of Trustees", Associated Consultants in Education, James L. Wattenbarger, Study Director, February 6, 1969, 90 pp.

4. Knoll, Dorothy, Articulation and Liaison Between and Among Colleges of All Levels, paper presented at 23rd A.A.H.E., Conference, Chicago, Ill., March 4, 1968, 4 pp.

5. Phenix, Philip, Realms of Meaning, McGraw-Hill Book Co., New York, N.Y., 1964, 391 pp.

6. Schwab, Joseph J., "Structure of the Disciplines: Meanings and Significances", in The Structure of Knowledge and the Curriculum, ed. by G. W. Ford and L. Pugno, Rand McNally, Chicago, 1964, pp. 1-30.